

In re Patent Application of:
MORIN ET AL.
Serial No. **10/701,165**
Filing Date: **November 4, 2003**

REMARKS

Applicants would like to thank the Examiner for the thorough examination of the present application. The independent claims have been amended to more clearly define the present invention over the cited prior art references. The claim amendments and arguments supporting patentability of the claims are presented in detail below.

I. The Claims Are Patentable

The Examiner rejected independent Claims 12, 20, 26 and 32 over the En et al. patent. The present invention, as recited in amended independent Claim 12, for example, is directed to a semiconductor device comprising a semiconductor substrate, at least one first MOS transistor and at least one second MOS transistor in the semiconductor substrate, and a dielectric layer on the at least one first MOS transistor and on the at least one second MOS transistor.

Independent Claim 12 has been amended to recite that an etch-stop layer comprises first and second layers. The first layer covers the at least one first MOS transistor and has a first residual stress level. A second layer covers the at least one first MOS transistor and the at least one second MOS transistor, and has a second residual stress level different than the first residual stress level. The first and second stress levels of the etch-stop layer may be selected to obtain variations in operating parameters of the MOS transistors.

Independent Claim 20 has been amended similar to amended independent Claim 12, except this claim recites that the first MOS transistor comprises an NMOS transistor and the

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second MOS transistor comprises a PMOS transistor. Likewise, independent Claim 26 has been amended similar to amended independent Claim 12, except this claim recites that the first MOS transistor comprises a PMOS transistor and the second MOS transistor comprises an NMOS transistor. Independent method Claim 32 has been amended similar to amended independent device Claim 12.

Referring now to the En et al. patent, the Examiner references FIG. 2I as disclosing a semiconductor device as in the claimed invention. In particular, the Examiner has taken the position that layer **150** covering NMOS transistor **102** has a first residual stress level (column 7, lines 50-60), and layer **130, 140** covering PMOS transistor **104** has a second residual stress level (column 6, lines 37-51) different than the first residual stress level.

The Applicants respectfully submit that the Examiner has mischaracterized the En et al. patent. Reference is directed to Column 3, lines 59-64 in En et al., which provides:

"In such an implementation, a tensile film material may thus be selectively provided over the PMOS transistors (e.g., and not over the NMOS devices) and compressive film material is provided over the NMOS devices (e.g., and not over the PMOS devices), wherein an intervening oxide layer need no be provided." (Emphasis added.)

The tensile film is represented by reference number **130** in FIG. 2I and is deposited on the PMOS transistor **104** only. The compressive film material is represented by

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reference number **150** in FIG. 2I and is deposited on the NMOS transistor **102** only, i.e., it does not cover the PMOS transistors as covered by the tensile film **130**. Consequently, the En et al. patent fails to disclose that the second etch stop layer (i.e., tensile film **130**) covers the first MOS transistor **104** and the second MOS transistor **102**, as in the claimed invention.


Accordingly, it is submitted that amended independent Claim 12 is patentable over the En et al. patent. Amended independent Claims 20, 26 and 32 are similar to amended independent Claim 12. Therefore, it is submitted that these claims are also patentable over the En et al. patent. In view of the patentability of the amended independent Claims 12, 20, 26 and 32, it is submitted that their dependent claims, which recite yet further distinguishing features of the invention, are also patentable. These dependent claims require no further discussion herein.

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CONCLUSION

In view of the claim amendments and the arguments provided herein, it is submitted that all the claims are patentable. Accordingly, a Notice of Allowance is requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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